



MARDI HARGREAVES

NEODYMIUM

Element Symbol: **Nd**

Atomic Number: **60**

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Neodymium is a soft silver coloured metal that readily oxidizes in air. It is part of the Lanthanide series of the periodic table. Neodymium is not found in its elemental state in nature rather it is found in ores. The predominant source for neodymium ores is China.

Neodymium was discovered by an Austrian chemist by the Baron Carl Auer von Welsbach in 1885 however it wasn't until 1925 it was isolated in pure form. It was named after two greek words neos for "new" and didymos for "twin".

Neodymium is one of the more reactive lanthanide metals and as such has a wide range of applications.

Neodymium magnets are a type of rare earth magnet and is the strongest permanent magnet known. A neodymium magnet can lift one thousand times its weight, and are commonly used to demonstrate levitation of two objects by using two magnets to repel each other and thus appear to levitate. However if your fingers get caught between two of these magnets, the force of attraction is enough to break bones and cause serious harm.

Common uses for these magnets are in MRI machines, loudspeakers and headphones, computer hard drives and electric motors for hybrid cars. A Toyota Prius requires a 1 kg neodymium magnet. Smaller neodymium magnets can be used in oil filters to trap metal fragments as they pass by.

In the past, neodymium was mixed with the glass used in incandescent light bulbs. The neodymium acted to filter out yellow incandescent light, producing a whiter light closer to natural daylight.

Neodymium is used in high powered lasers, with the Nd:YAG laser being one of the most common lasers. These lasers have a wide range of uses with many in the medicinal field such as the removal of skin cancers and hair removal.

Provided by the element sponsor Sarah Lau

ARTISTS DESCRIPTION

Colours of print inspired by glass. Neodymium used to colour glass and enamels, changing appearance under different lighting conditions. Purple under daylight and blue under fluorescent. The headphones refer to the use of neodymium in magnets.

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